

AMENDMENTS

In the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application.

1-5. (Cancelled)

6. (Currently Amended) A bone fixation assembly comprising:

a coupling element having an inner surface defining a first bore coaxial with a first longitudinal axis and a second bore, coaxial with a second longitudinal axis, wherein said first and second longitudinal axes ~~are transverse to~~ intersect and are in communication with one another; and an anchoring element assembled with said coupling element, said anchoring element having a first end for insertion into bone.

7. (Previously Presented) The assembly of Claim 6 wherein said coupling element has an upper end and a lower end, said first bore extending from said upper end toward said lower end and said second bore extending from said lower end toward said upper end.

8. (Previously Presented) The assembly of Claim 7, wherein said first and second bores are in communication with one another between said upper and lower ends of said coupling element.

9. (Previously Presented) The assembly of Claim 7, wherein said upper end of said coupling element defines a first plane and said lower end of said coupling element defines a second plane, and wherein said first and second planes intersect one another.

10. (Previously Presented) The assembly of Claim 7, wherein said anchoring element projects from said lower end of said coupling element.

11. (Previously Presented) The assembly of Claim 6, wherein said anchoring element is a separate member assembled with said coupling element so that said coupling element and said anchoring element are movable relative to one another.

12. (Previously Presented) The assembly of Claim 7, wherein said second bore includes a seat adjacent said lower end of said coupling element, and wherein said seat is adapted to engage said anchoring element.

13. (Previously Presented) The assembly of Claim 12, wherein said anchoring element has a head having a substantially spherical underside adapted to engage said seat.

14. (Canceled)

15. (Currently Amended) The assembly of Claim ~~14~~ 13, wherein said seat has a substantially concave surface adapted to engage the spherical underside of said head.

16. (Canceled)

17. (Previously Presented) The assembly of Claim 13, further comprising a locking element engageable with said coupling element for locking the position of said coupling element with respect to said anchoring element.

18. (Previously Presented) The assembly of Claim 17, wherein said locking element urges a stabilizing rod toward said lower end of said coupling element which in turn forces said head of said anchoring element against said seat for locking said coupling element and said anchoring element from further movement relative to one another.

19. (Previously Presented) The assembly of Claim 18, wherein said seat is defined by an interior wall of said coupling element.

20. (Previously Presented) The assembly of Claim 6, wherein said coupling element has an exterior surface, an upper end and a lower end, said rod-receiving openings extending from said upper end toward said lower end, and wherein said coupling element comprises cutes between said exterior surface and said rod-receiving openings for minimizing the width of said coupling element.

21. (Previously Presented) The assembly as claimed in Claim 6, wherein said anchoring element is a screw fastener having screw threads extending from said first end toward a second end thereof.

22. (Currently Amended) A bone fixation assembly comprising:
a coupling element having an upper end defining a first plane, a lower end defining a second plane, and at least one bore extending from said upper end toward said lower end, wherein said first and second planes intersect one another; and
an anchoring element assembled with said coupling element, said anchoring element being adapted for insertion into bone; and
said coupling having a U-shaped opening that extends from the upper end of said coupling element toward the lower end of said coupling element, wherein the U-shaped element is adapted to receive a stabilizing rod.

23. (Previously Presented) The assembly of Claim 22, wherein said coupling element includes at least one bore extending between said upper end and said lower end for receiving said anchoring element.

24. (Previously Presented) The assembly of Claim 22, wherein said coupling element has a seat shaped to allow said coupling element to pivot with respect to said anchoring element.

25. (Previously Presented) The assembly of Claim 24, wherein said anchoring element has a head with a substantially spherical shape and said coupling element has a seat adjacent said lower end thereof, and wherein said spherical head is adapted to engage said seat.

26. (Previously Presented) The assembly of Claim 25, wherein said head has at least one depression adapted to receive a driver for driving said anchoring element into bone.

27. (Previously Presented) The assembly of Claim 25, wherein said anchoring element includes a reduced diameter neck for facilitating pivotal movement of said coupling element with respect to said anchoring element.

28. (Currently Amended) A coupling element having an upper end and a lower end comprising:
a first section extending from said upper end toward said lower end of said coupling element, said first section including a first bore coaxial with a first longitudinal axis;

a second section extending from said lower end toward said upper end of said coupling element, said second section having a second bore coaxial with a second longitudinal axis that intersects said first longitudinal axis; and

a U-shaped rod-receiving openings opening extending between from said upper and end toward said lower ends end of said coupling element and being adapted to receive an orthopedic stabilizing rod;

said coupling element having an inner surface defining said first and second bores and a seat adjacent said second bore at said lower end of said coupling element; and

an anchoring element having a first end for insertion into bone and a head spaced from said first end, said head being in contact with said seat of said coupling element.

29. (Previously Presented) The coupling element of Claim 28, wherein said second bore includes a seat adjacent said lower end of said coupling element.

30. (Previously Presented) The coupling element of Claim 29, wherein said seat is adapted to engage a head of an anchoring element secured with said coupling element so that said coupling element and said anchoring element are pivotable relative to one another.

31. (Previously Presented) The coupling element of Claim 30, wherein said seat is adapted to engage an underside of said head of said anchoring element.

32. (Previously Presented) The coupling element of Claim 28, wherein said coupling element has an outer surface with notches for engagement by an instrument for positioning said coupling element with respect to an orthopedic rod.

33. (Currently Amended) A coupling element for a bone fixation assembly comprising:
an upper end defining a first plane;
a lower end defining a second plane;
at least one bore extending between said upper end and said lower end, said at least one bore being adapted to receive an anchoring element, wherein said first plane and said second plane intersect one another;

said coupling element having a U-shaped opening that extends from the upper end of said coupling element toward the lower end of said coupling element, wherein said U-shaped opening is adapted to receive a stabilizing rod.

34. (Previously Presented) The coupling element as claimed in Claim 33, wherein said coupling element has a first bore extending from said upper end toward said lower end and a second bore extending from said lower end toward said upper end, and wherein said first and second bores are angled relative to one another.

35. (Currently Amended) A coupling element for a pedicle screw assembly, comprising:
said coupling including an inner surface having a first section at an upper end of said coupling element, said first section having defining a first bore extending therethrough through said coupling element that is coaxial with a first longitudinal axis;
the inner surface having a second section at a lower end of said coupling element, said second section having defining a second bore extending therethrough through said coupling element that is coaxial with a second longitudinal axis, wherein said first and second longitudinal axes intersect one another.

36. (Currently Amended) A method of stabilizing ~~an area of the spine of a patient bone~~ comprising:

providing a coupling element having first and second sections that are angled relative to one another, said coupling element having rod-receiving openings for ~~securing an orthopedic rod receiving an elongated member;~~

assembling said coupling element with an anchoring element;
after the assembling step, securing said anchoring element in bone;
moving said coupling element relative to said anchoring element to align said rod-receiving openings with said ~~orthopedic rod elongated member;~~
securing said ~~orthopedic rod elongated member~~ in said rod-receiving openings; and

after the securing step, locking said coupling element from further movement relative to said anchoring element.

37. (Previously Presented) The method of Claim 36, wherein said coupling element has a first bore extending through said first section and a second bore extending through said second section.

38. (Previously Presented) The method of Claim 36, wherein said rod-receiving openings extend through said first section of said coupling element in a direction transverse to said first bore.

39. (Previously Presented) The method of Claim 36, wherein said first and second bores intersect one another between said upper and lower ends of said coupling element.

40. (Previously Presented) The assembly of Claim 13, wherein said anchoring element includes a neck adjacent said head having a diameter less than the diameter of said threaded portion for facilitating pivotal movement of said coupling element and said anchoring element relative to one another.

41. (Previously Presented) The coupling element of Claim 30, wherein said inner surface includes threads adjacent said upper end thereof for engaging a locking element for securing an orthopedic rod within said rod receiving openings of said coupling element.

42. (Previously Presented) The coupling element of Claim 34, wherein said locking element has external threads adapted for threading into said internal threads of said coupling element.

43. (New) The method of Claim 36, wherein said elongated member is an orthopedic rod.

44. (New) A method of stabilizing a spine comprising:
providing a coupling element having a first bore coaxial with a first longitudinal axis and a second bore coaxial with a second longitudinal axis, wherein said first and second longitudinal axes are transverse to one another;

assembling said coupling element with an anchoring element; and
after the assembling step, securing said anchoring element in bone.

45. (New) The method of Claim 44, wherein said coupling element has rod receiving openings for securing an orthopedic rod, the method further comprising:

moving said coupling element relative to said anchoring element to align said rod-receiving openings with said orthopedic rod;

securing said orthopedic rod in said rod-receiving openings; and

after the securing step, locking said coupling element from further movement relative to said anchoring element.

46. (New) The method as claimed in claim 44, wherein said coupling element has an upper end and a lower end, said first bore extending from said upper end toward said lower end and said second bore extending from said lower end toward said upper end.

47. (New) The method as claimed in claim 46, wherein said first and second bores are in communication with one another between said upper and lower ends of said coupling element.

48. (New) The method as claimed in claim 44, wherein said upper end of said coupling element defines a first plane and said lower end of said coupling element defines a second plane, and wherein said first and second planes intersect one another.

49. (New) The method as claimed in claim 44, wherein said anchoring element is a separate member assembled with said coupling element so that said coupling element and said anchoring element are movable relative to one another.

50. (New) The method as claimed in claim 44, wherein said anchoring element has a head having a substantially spherical underside, and wherein said coupling element has a seat at the lower end thereof.

51. (New) The method as claimed in claim 50, wherein said seat is shaped for facilitating pivotal movement of said coupling element and said anchoring element relative to one another.

52. (New) The method as claimed in claim 51, wherein said seat is substantially conical with sidewalls tapering inwardly toward said lower end of said coupling element, and wherein the spherical underside of the head of said anchoring element is adapted to engage the conical seat of said coupling element.

53. (New) The method as claimed in claim 51, wherein said seat has a substantially concave surface adapted to engage the spherical underside of said head.

54. (New) A method of stabilizing a spine comprising:

providing a coupling element having an uppermost end defining a first plane, a lowermost end defining a second plane, and at least one bore extending from said uppermost end toward said lowermost end, wherein said first and second planes intersect one another;
assembling said coupling element with an anchoring element;
after the assembling step, securing said anchoring element in bone.

55. (New) The method as claimed in claim 54, wherein said coupling element has rod receiving openings for securing an orthopedic rod, the method further comprising:

moving said coupling element relative to said anchoring element to align said rod receiving openings with said orthopedic rod;
securing said orthopedic rod in said rod receiving openings; and
after the securing step, locking said coupling element from further movement relative to said anchoring element.

56. (New) The method as claimed in claim 54, wherein said at least one bore is adapted for receiving said anchoring element.

57. (New) The method as claimed in claim 54, wherein said anchoring element has a head with a substantially spherical shape and said coupling element has a conical-shaped seat adjacent said lower end thereof, and wherein said spherical head is adapted to engage said conical seat.

58. (New) The method as claimed in claim 54, wherein said rod receiving openings are defined by substantially U-shaped opening surfaces.

59. (New) A bone fixation assembly comprising:

a coupling element for coupling a rod, the coupling element having a first bore coaxial with a first longitudinal axis and a second bore; and

an anchoring element having a first end for insertion into bone and a second end positionable within the second bore, the anchoring element being movable relative to the coupling element in at least a first direction at a first angle relative to the first longitudinal axis and in at least a second direction at a second angle relative to the first longitudinal axis, the second angle being greater than the first angle.

60. (New) The bone fixation assembly according to claim 59, further comprising a counterbore formed on the opening plane of the second bore.